

ANNOTATIONES ZOOLOGICAE JAPONENSES

Volume 55, No. 2—June 1982

Published by the Zoological Society of Japan

A New Species of the Genus *Gampsocleis*
(Orthoptera, Tettigoniidae)
from the Ryukyu Islands

With 13 Text-figures

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ABSTRACT A remarkable new species of the genus *Gampsocleis* is described from Okinawa-jima and Miyako-jima Islands in the Ryukyus and Taiwan under the name of *G. ryukyuensis*. It is characterized by the large body and long slender elytra, and is closely related to the Chinese long-winged species *G. sinensis*, which, however, has relatively long elytra and relatively short ovipositor. On the other hand, the new species is similar to *G. buergeri* in such characters as male cerci, titillator and ovipositor.

The genus *Gampsocleis* is a group of tettigonids widely distributed in the Palearctic Region. Two species of the genus, *G. sinensis* from China and *G. sp* from Taiwan, exceptionally spread southwards into the Oriental Region. The former is a Walkerian species originally described in 1869 as *Decticus sinensis* on a female from Amoy (Xiamen). In 1906, KIRBY removed this to the genus *Gampsocleis* and subsequently, its systematic status was discussed by UVAROV (1924) and DIRSH (1927). UVAROV was inclined to accept this Walkerian species as a good one, while DIRSH considered that this is a “*species inquirende*” because of its problematical affinity within the genus. No taxonomic reference to this species has been made since then. The species from Taiwan was shown without description by KATO in 1932 in his coloured iconographia. This is the only information about the unidentified species given up to the present.

On the other hand, it has been known to some entomologists including myself that a large undescribed species of *Gampsocleis* occurs in the Ryukyu Islands which belong to the Oriental Region. When I had an opportunity to visit Okinawa-jima of these islands in June, 1976, I was able to obtain but one male of this insect. However, some specimens of the same species were available for my study by loans from the Entomological Institute of Hokkaido University and of the Entomological Laboratory of Kyushu University, and Dr. S. ASAHINA and Mr. Y. OSHIRO kindly

gave me one male and one female collected by themselves. Examining these material and judging from WALKER's description and UVAROV's measurement, I have come to the conclusion that this *Gampsocleis* can be considered to differ from *sinensis*, but that KATO's *G.* sp. may be conspecific with the *Gampsocleis* species from the Ryukyus.

In the following lines, I will give description of this Ryukyu species together with some notes on the Taiwanese *Gampsocleis*.

***Gampsocleis ryukyuensis* YAMASAKI, sp. nov.**

[Japanese name: Okinawa-kirigirisu]

Gampsocleis sp.: KATO, 1932, Three Col. Illust. Ins. Japan, 1, p. 45, pl. 45, fig. 1 ("1♂, Sôzan, Taiwan; Taiwan Kirigirisu").

Closely related to *G. sinensis* WALKER and *G. buergeri* DE HAAN. Size large for the genus. Elytra and hind femora long. Titillator as shown in Figs. 7 and 8. Ovipositor relatively long, weakly decurved or almost straight.

Male. Body (Fig. 1) robust, 40 mm in average size.

Head large, smooth and shiny, with fastigium of vertex, whose width is as long as the first antennal segment. Eyes almost roundish. Pronotum large; the anterior margin slightly incurved and the posterior margin round; disc almost flat, but slightly depressed at the V-shaped sulcus area in the posteromedian portion of pronotum, with two transverse sulci, one at anterior third and the other at about posterior third, the former sometimes disappeared at the median portion, with the two ends continuous onto the dorsal portion of lateral lobes, while the latter becomes faint at both the ends, and with a median, feebly recognizable, carina on metazona. Elytra (Figs. 1-2) very long and slender for the genus, always extending beyond the end of

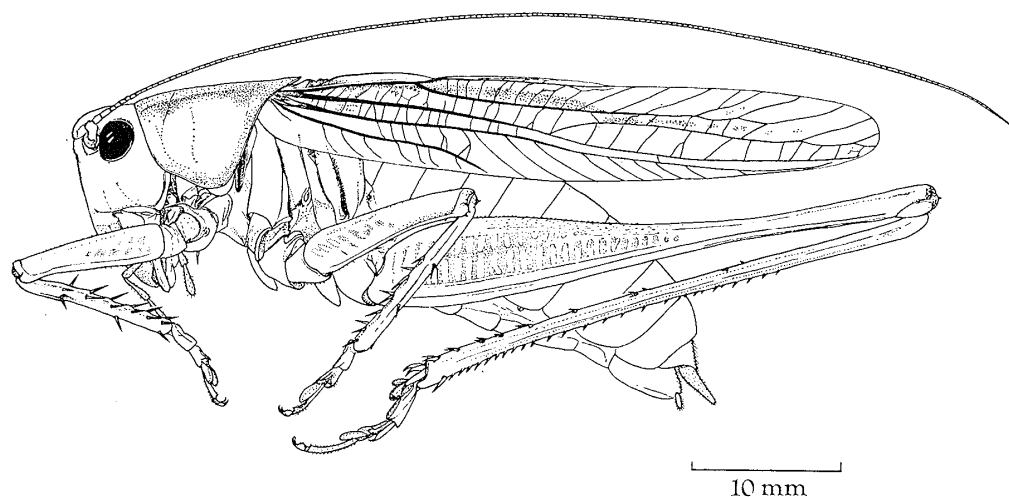


Fig. 1. *Gampsocleis ryukyuensis* YAMASAKI, sp. nov., holotype male, from Haneji, Okinawa-jima Island.

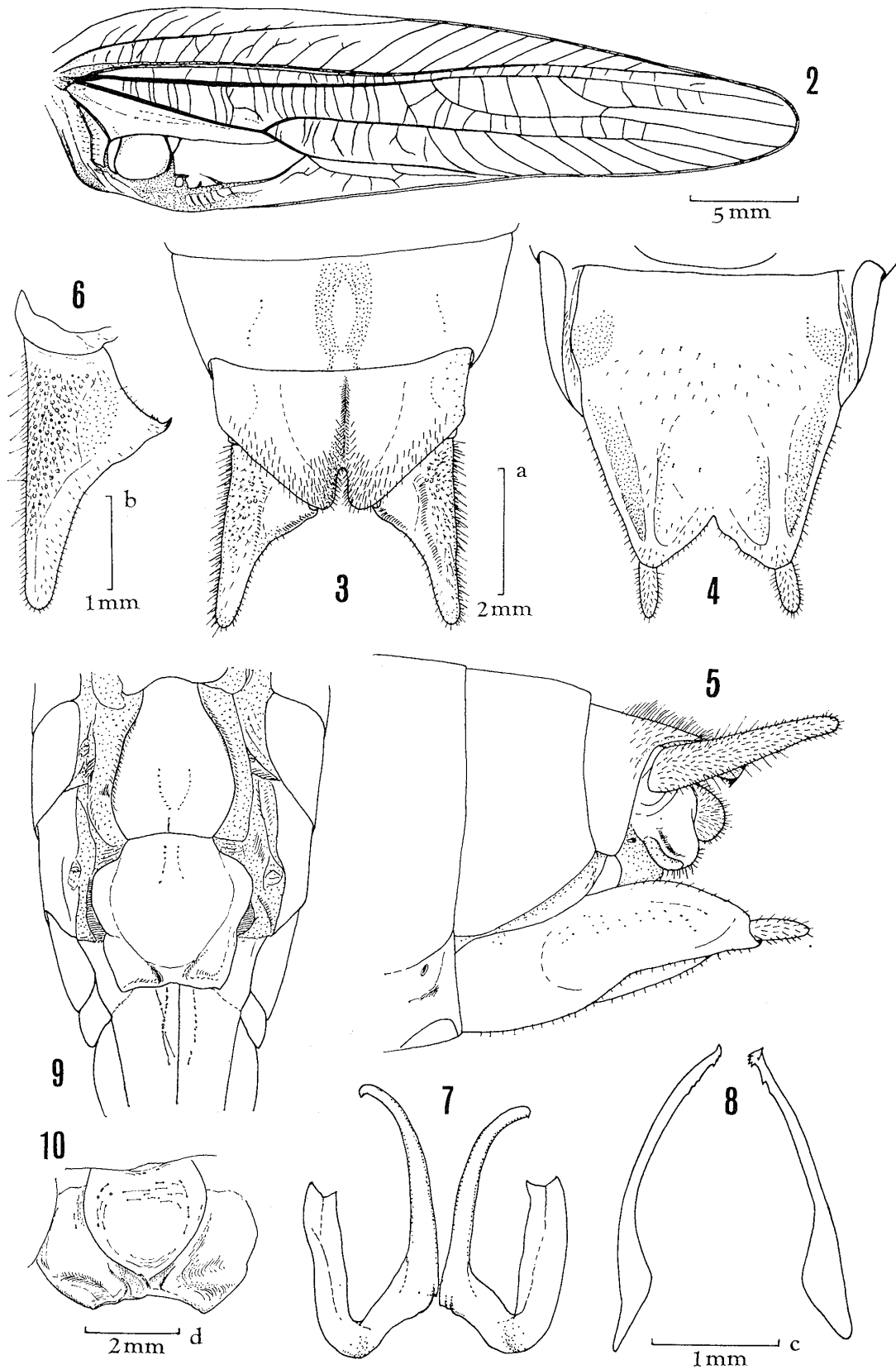
abdomen and reaching subapical portion of hind femora; tip broadly rounded; stridulatory file composed of about 70 teeth which are about a half as many as those in *G. buergeri*. Fore tibia armed with three widely spaced and elongate spines on the dorso-external margin and six spines on both the ventral margins. Middle tibia armed with two elongate spines on the dorso-external margin, four on dorso-internal one and six on both the ventral ones. Hind femora with five, six or more black denticles on lower internal carina; similar denticles also occur, but rarely, on lower external carina. Hind tibia armed with about 25 stout spines on both the dorsal margins, of which only distal or subapical spines are longer and thicker than the others, and with more elongate spines on the ventral surface, fewer than ten; apex armed ventrally with four spurs, of which the internal one is the longest, the external one is also long but the middle two spurs are short and subequal; all spines and spurs with black tips.

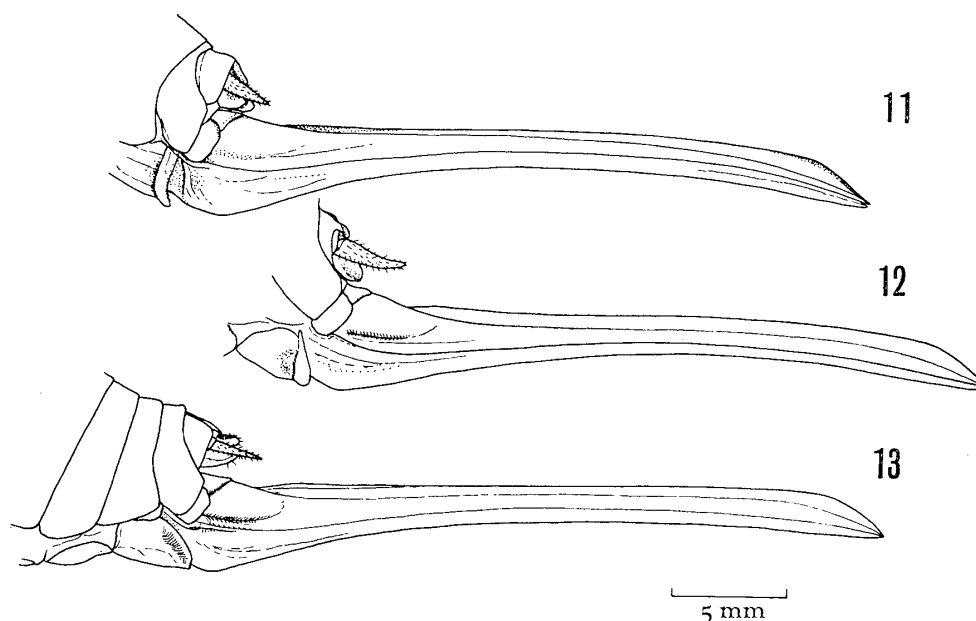
Abdominal end as shown in Figs. 3–5; supra-anal plate (figure 3 was drawn by using living material) hirsute posteriorly with a deep and narrow medial incision; subgenital plate (Fig. 4) with a broad V-shaped incision on the posterior margin. Cerci as shown in Fig. 6, very similar to those of *G. buergeri*, with internal conical tooth placed distinctly before the middle; anterior margin of the tooth subapically with two denticles on dorsum and three on venter; apical half of cerci cylindrical with the tip round. Styli three times as long as their basal width (slightly shorter in the case of Fig. 4). First titillator as shown in Fig. 7. Second titillator (Fig. 8) apically with some denticles, which are more numerous than in *G. buergeri*.

Body grass-green. Head grass-green; dorsal surface sometimes brownish with a pale slender medial line. Antenna brown. Pronotum grass-green; disc sometimes brownish; lateral lobe with an irregular brown band along the dorsal margin, but this band is occasionally lost. Elytra grass-green in anterior half and brownish in posterior half; R and M+Cu₁ veins blackish brown in basal half, other main veins brown; C and R areas bright green or yellowish green, anterior medial area with some dark spots, and also radial sector area with some obscure dark spots. Abdomen pale yellowish brown; posterior margin of each segment greenish at both sides.

Female. Elytra extending beyond half the length of ovipositor and sometimes slightly beyond hind knee. Abdominal end as shown in Figs. 9–13; seventh sternite narrow in the anterior part, becoming wider backwards, again becoming narrower in the posterior part; subgenital plate often deformed in dried specimens (figure 9

Figs. 2–10. Elytron and genital parts of *Gampsocleis ryukyuensis* YAMASAKI, sp. nov. — 2. Male right elytron (specimen from Gushichan, Okinawa-jima Is.). — 3–5. Male abdominal end (specimen from Goga-yama, Okinawa-jima Is.), dorsal, ventral and lateral views. — 6. Male right cercus, dorsal view. — 7. First titillator. — 8. Second titillator. — 9. Female abdominal end showing 7th sternite and subgenital plate (specimen from Hisamatsu, Miyako-jima Is.), ventral view. — 10. Female subgenital plate (specimen from Goga-yama, Okinawa-jima Is.), ventral view. Scale a is for Figs. 3–5, b for Fig. 6, c for Figs. 7 and 8, and d for Figs. 9 and 10.





Figs. 11–13. Ovipositors of *Gampsocleis ryukyuensis* YAMASAKI, sp. nov., from Okinawa-jima Is. (11), from Goga-yama, Okinawa-jima Is. (12), and from Hisamatsu, Miyako-jima Is. (13).

shows it in distorted condition and figure 10 in comparatively good condition). Cerci conical; tip pointed. Ovipositor (Figs. 11–13) slightly decurved or almost straight, obliquely truncated at the apical portion.

Coloration almost the same as in male, but the medial and first cubital areas or humeral parts of elytra are blackish brown and the ovipositor brownish.

Measurement (in mm). Body length, ♂ 36.8–45.0 (45.0 in holotype), ♀ 35.6–36.6; pronotal length, ♂ 9.5–11.4 (11.3), ♀ 10.5–11.1; elytral length, ♂ 33.0–40.4 (40.4), ♀ 43.7–46.5; hind femoral length, ♂ 32.4–39.3 (38.3), ♀ 39.2–41.0; ovipositor length, 26.9–29.9.

Type-series. Holotype: ♂, Haneji, Okinawa-jima Island, 12-v-1931, S. ASAHINA leg. Paratypes (including allotype): 1 ♂, Gushichan, Okinawa-jima Is., 21-vi-1976, T. YAMASAKI leg.; 1 ♂ (specimen of Ent. Inst., Hokkaido Univ.), Okinawa, vii-1905; 1 ♀ (allotype), Goga-yama, Nakijin-son, Okinawa-jima Is., 26-vi-1980, Y. OSHIRO leg.; 1 ♀ (specimen of Ent. Inst., Hokkaido Univ.), Okinawa, 1-ix-?, S. SAKAGUCHI leg.; 1 ♀ (specimen of Ent. Lab., Kyushu Univ.), Hisamatsu, Miyako-jima Is., 4-ix-1968, T. HIDAOKA leg.

The holotype and two paratypes (one male and one female designated as the allotype) are deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo, two paratypes (one male and one female) are preserved in the collection of the Entomological Institute of Hokkaido University, and one paratype (one female from Miyako-jima Is.) is preserved in the collection of the Entomological Laboratory of Kyushu University, Fukuoka.

Type-locality. Haneji, the midwest in Okinawa-jima Island, the Ryukyus.

Range. Definitely known so far from Okinawa-jima and Miyako-jima Islands (including their dependent islets) in the Ryukyus; also occurs in Taiwan (?).

Notes. The present new species is characterized by the large body and long slender elytra, though these are variable to some extent. In these characters, this new species seems to be closely related to the Chinese long-winged species *G. sinensis*. According to UVAROV (1924), the measurements of the type-specimen (female) of *sinensis* are 36.0 mm in body length, 9.8 mm in pronotal length, 48.0 mm in elytral length, 36.5 mm in hind femoral length and 21.5 mm in ovipositor length. The present new species has almost the same body size as *sinensis*, but it differs from *sinensis* in bearing relatively short elytra and relatively long ovipositor. As was already noted in the introduction of this paper, *G. sinensis* has not sufficiently been studied and, therefore, I have nothing further to discuss about the relationship between the two species.

Hereupon should it be noted about the Taiwanese *Gampsocleis* illustrated by KATO in 1932. Judging only from the colour plate of his iconographia, this unidentified species seems to be identical with the present new species. However, future studies are needed to confirm if this is actually the case or not, since the account in KATO's iconographia is very inadequate and also defective.

The present new species is also closely related to *G. buergeri* widely distributed in the Japanese Islands excluding Hokkaido. Such characters as the shape of male cerci, titillators and ovipositor are very similar between the two species, but the elytral features are greatly different. The male elytra are long and slender in the present new species but relatively short and basally wider in *G. buergeri*, and the number of stridulatory teeth is different between them, and the tip of the female elytra always extends beyond half the length of ovipositor in the former but not in the latter.

The present new species may have been derived from a Chinese relative in the Oriental Region, but it is indispensable to ascertain the entity of *G. sinensis* for confirming this assumption.

ACKNOWLEDGEMENTS

I wish to express my gratitude to Dr. S. ASAHINA, Tokyo, and Mr. Y. OSHIRO, Naha, for giving me the material. My thanks are also due to Dr. T. KUMATA, Entomological Institute of Hokkaido University, Sapporo, and Dr. K. YASUMATSU, Entomological Laboratory of Kyushu University, Fukuoka, for the loan of specimens.

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